CLAIMS

What is claimed is:

1. A thin film resistor (TFR) structure comprising:

a TFR;

a first electrical interface portion coupled to a first end of the TFR; and

a second electrical interface portion coupled to a second end of the TFR, the first electrical interface portion and the second electrical interface portion formed of a layer of titanium (Ti) and a layer of titanium nitride (TiN).

2. The TFR structure of claim 1, the TFR formed from one of silicon chromium (SiCr) alloy, nickel chromium (NiCr) alloy, tantalum nitride, titanium nitride, and tungsten.

3. The TFR structure of claim 1, the Ti layer having a thickness in the range from about 100Å to about 300Å.

4. The TFR structure of claim 1, the TiN layer having a thickness in the range from about 800Å to about 3000Å.

5. The TFR structure of claim 1, the thin film resistor having a thickness in the range of about 50 Å to about 400 Å.

6. The TFR structure of claim 1, further comprising a first contact extending through a dielectric from the first electrical interface portion, and a second contact extending through the dielectric from the second electrical interface portion, the dielectric electrically isolates the first electrical interface portion from second electrical interface portion and the first contact from the second contact.

7. The TFR structure of claim 6, each of the first contact and the second contact comprising a conductive portion and a contact portion extending from the respective electrical interface portion to the respective conductive portion.

8. The TFR structure of claim 7, the contact portions being formed from at least one of tungsten, aluminum, aluminum alloy, copper, copper alloy and a tungsten alloy, and the conductive portions being formed from at least one of aluminum, aluminum alloy, copper, copper alloy, tungsten, a tungsten alloy and a composite of aluminum with titanium and titanium nitride.

9. The TFR structure of claim 1, further comprising an oxide layer below portions of the first electrical interface portion and the second electrical interface portion with defined openings that provide electrical contact to the first and second ends of the TFR.

10. A method of fabricating a thin film resistor (TFR) structure comprising:

forming a TFR;

forming a dielectric layer over the TFR;

forming a first TFR via in the dielectric layer over a first end of the TFR and forming a second TFR via in the dielectric layer over a second end of the TFR;

forming a layer of titanium (Ti) over the first and second TFR vias; and

forming a layer of titanium nitride (TiN) on the (Ti) layer, the layer of Ti and the layer of TiN forming a first electrical interface portion to the first end of the TFR and a second electrical interface portion to the second end of the TFR.

11. The method of claim 10, the forming a first TFR via in the dielectric layer over a first end of the TFR and forming a second TFR via in the dielectric

layer over a second end of the TFR comprising performing an etch process on the dielectric to form the first and second TFR vias.

12. The method of claim 10, wherein the dielectric layer is formed from a material selected from the group comprising: TEOS silicon oxides and PEVCD silicon oxides.

13. The method of claim 10, the TFR formed from one of silicon chromium (SiCr) alloy, nickel chromium (NiCr) alloy, tantalum nitride, titanium nitride, and tungsten.

14. The method of claim 10, the TFR having a thickness in the range of about 90 Å to about 400 Å.

15. The method of claim 10, the Ti layer having a thickness in the range from about 100Å to about 300Å and the TiN layer having a thickness in the range from about 800Å to about 3000Å.

16. The method of claim 10, further comprising:

forming a dielectric material layer over the first electrical interface portion and the second electrical interface portion;

forming a first contact via extending to the first electrical interface portion and a second contact via extending to the second electrical interface portion;

filling the first contact via and the second contact via with a contact material; and

performing a chemical mechanical polish on the contact material to form a first contact portion and a second contact portion.

17. The method of claim 16, further comprising:

forming a dielectric material layer over the first contact portion and the second contact portion;

forming a first conductive via extending to the first contact portion and a second conductive via extending to the second contact portion;

filling the first conductive via and the second conductive via with a conductive material; and

performing an etch on the conductive material to provide a first conductive portion coupled to the first contact portion and a second conductive portion coupled to the second contact portion.

18. The method of claim 17, the contact material being at least one of tungsten, aluminum, aluminum alloy, copper, copper alloy and a tungsten alloy, and the conductive material being at least one of aluminum, aluminum alloy, copper, copper alloy, tungsten, a tungsten alloy and a composite of predominantly aluminum with titanium and titanium nitride.

19. A method for forming a thin film resistor (TFR) structure, the method comprising:

forming a dielectric layer over a TFR layer;

etching the dielectric layer at least once to form first TFR vias in the dielectric layer to form contact pads on a first end and a second end of the TFR layer;

sputter etching the dielectric layer and TFR layer to remove any remaining oxide;

forming a layer of titanium (Ti) in the first TFR vias and over the oxide layer;

forming a layer of titanium nitride (TiN) on the (Ti) layer;

etching the titanium (Ti) layer and titanium nitride (TiN) layer to form an opening that defines a first electrical interface portion coupled to the first end of the TFR layer and a second electrical interface portion coupled to the second end of the TFR layer; and

forming a first contact coupled to the first electrical interface portion and a second contact coupled to the second electrical interface portion.

20. The method of claim 19, the Ti layer having a thickness in the range from about 100Å to about 300Å and the TiN layer having a thickness in the range from about 800Å to about 3000Å.

21. The method of claim 19, the at least one etch of the dielectric layer to form the first TFR vias using a dilute hydrofluoric acid solution.